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AMPHIBIANS AND REPTILES OF YEMEN

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The collections of amphibians and reptiles made in the Kingdom of Yemen by the United States Medical Mission in 1951 considerably increase the list of species of these groups on record from this little-known region. Some account of the work of the mission and its itinerary is given in the paper on the mammals and their ectoparasites by Messrs. Sanborn and Hoogstraal (1953), and Mr. Hoogstraal has published a popular account of his visit to Yemen (1952). Yemen, the Kingdom of the Queen of Sheba in ancient times, has been almost completely closed to foreigners through much of its history. After alternations of Egyptian, Abyssinian, Arab, and Turkish rule, Yemen became an independent kingdom after World War I, in 1918. Diplomatic relations with the United States were not established until 1946. The need for advice concerning matters of public health led to the invitation to foreign medical missions to come to the country. Chicago Natural History Museum is indebted to the United States Naval Medical Research Unit No. 3, in Cairo, Egypt, for this collection and the privilege of reporting on it.

The earliest mention of Yemen in herpetological literature appears to be that of Forskål (1775), who had joined Carsten Niebuhr's expedition to the borders of the Red Sea in 1761. Forskål's *Descriptiones animalium* includes an appendix on Arabian *materia medica*, but in this, I am sure, the direction of flow of medical knowledge or, perhaps better, of medical misinformation, was to the western countries and not into Arabia. Forskål describes two species of snakes from Yemen itself, *Coluber schokari* (= *Psammodon schokari*) and *Coluber dhara* (= *Telescopus dhara*).

The first medical mission to Yemen with a by-product of herpetological collections was that of Captain Emilio Dubbiosi, of the Medical Corps of the Italian Army. He was stationed at San'a from August to October, 1928, and from March to July, 1929. The reptiles obtained by Captain Dubbiosi were reported upon by Scor-

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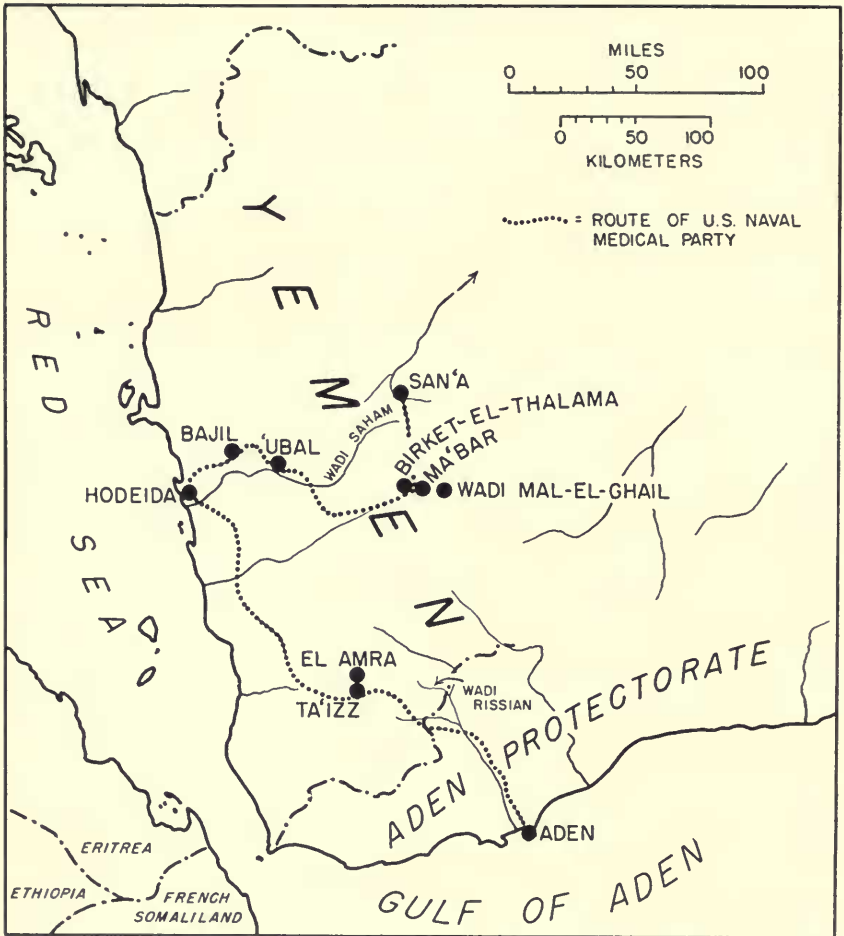


FIG. 43. Map of Yemen, showing localities mentioned in text.

tecci (1932). The only mention of reptiles from Yemen between 1775 and 1932 that has come to my attention is the short description of a specimen of *Chamaeleo calyptratus* by John Anderson (1896).

An entomological party from the British Museum in 1937-38 made important collections, which included a small lot of reptiles reported upon by H. W. Parker (1941). By far the best account of Yemen available is the book *In the High Yemen* by Hugh Scott, leader of the expedition, with distinguished illustrations from photographs by the author and his companion, Everard B. Britton.

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The collections of the United States Naval Medical Mission amount to twenty-seven species, of which eighteen are new to the Yemen list. There is little faunal distinction to be expected between Yemen and the Aden Protectorate; but the mountains of Yemen rise to greater heights, with a correspondingly broader temperate zone. Some northern forms might well find their southern limits in these mountains.

It is at first puzzling to note the lack of correspondence between Scortecci's list of species and the present one; his list of fourteen species of snakes and one lizard and our list of three amphibians, eighteen lizards, and five snakes overlap only with the sand snake, *Psammodromis schokari*. Captain Dubbiosi collected in spring and fall, and Mr. Hoogstraal and Lieutenant Kuntz were in the country only in January and February. The snakes were evidently largely in hibernation during those months, while the mid-day sun brought out the lizards.

The relation between the fauna of Yemen and that of Eritrea, on opposite sides of the southern Red Sea, is not as close as might be expected. In Scortecci's list of the reptiles of Eritrea, amounting to 52 species (1928), only eleven species (six snakes and five lizards) are represented in both countries, usually by distinct subspecies. Even with the inclusion of the Aden fauna only three additional species are added to the list in common. It may well be that the relation of the herpetological fauna of southwestern Arabia is with Somaliland rather than with Eritrea. A critical review of these faunal relations cannot be undertaken in the present paper. Parker (1941) has commented on the complexity of the Arabian fauna.

AMPHIBIA

Bufo orientalis Werner

Bufo viridis var. *orientalis* Werner, 1895, Verh. zool. bot. Ges. Wein, 45: 20—Maskat, Arabia.

Bufo orientalis Parker, 1941, Brit. Mus. Exped. S. W. Arabia 1937-8, 1: 6.

The abundant common toad of the Yemen is represented by 150 specimens from Ta'izz; El Amra (10 km. north of Ta'izz); 48 km. east of 'Obal; Wadi Siham (64 km. east of 'Obal); 8 km. west of Ma'bar; Wadi Mal-el-Ghail, 13 km. west of Ma'bar; and San'a. I find no differences between the toads of Ta'izz (4,100 ft. alt.) and San'a (7,100 ft. alt.). The flattened and relatively obscure parotoid gland

distinguishes *orientalis* from *Bufo regularis*, which is to be expected in Yemen but was not obtained by the Hoogstraal party.

Hyla arborea savignyi Audouin

Hyla savignyi Audouin, 1827, Descr. Egypte, Rept., Suppl., pl. 2, fig. 13—Syria.

Hyla arborea savignyi Mertens, 1924, Abh. Ber. Mus. Magdeburg, 3: 356.

Forty-two specimens, from San'a and from 8 km. west of Ma'bar.

Rana cyanophlyctis ehrenbergi Peters

Rana ehrenbergi Peters, 1863, Monatsber. Akad. Wiss. Berlin, 1863: 79—Arabia.

Rana cyanophlyctis ehrenbergi Parker, 1941, Brit. Mus. Exped. S. W. Arabia 1937-8, 1: 5.

Sixty specimens from Wadi Siham, near 'Obal; Wadi Rissian, below Hagda; Tai'zz (in the King's swimming pool); Ma'bar; about 13 km. west of Ma'bar, at the Wadi Mal-el-Ghail; and at Birket-el-Thalama.

REPTILIA

Stenodactylus pulcher Anderson

Stenodactylus (Ceramodactylus) pulcher Anderson, 1896, Contr. Herpet. Arabia, p. 19—the Hadramut.

A single specimen, from a locality 8 km. east of Hodeida, near sea level. Caught among hummocks at night.

Pristurus crucifer Valenciennes

Gymnodactylus crucifer Valenciennes, 1861, C. R. Acad. Sci. Paris, 52: 433—Abyssinia.

Pristurus crucifer Boulenger, 1885, Cat. Lizards Brit. Mus., 1: 55.

Three specimens from Hodeida, among sand hummocks in the coastal desert.

Pristurus rupestris rupestris Blanford

Pristurus rupestris Blanford, 1874, Ann. Mag. Nat. Hist., (4), 13: 454—Muscat and Island of Karrack near Busheer, Persian Gulf.

Sixty-eight specimens from San'a; Ma'bar; 8 km. west of Ma'bar; Wadi Mal-el-Ghail; and Ta'izz.

My supposition, in distinguishing the Iranian *rupestris* as subspecies *iranicus*, that the *rupestris* of the Arabian coast had unspotted

throats was based on Blanford's description of his Muscat specimens. This is wholly erroneous so far as the present specimens from the southwestern corner of Arabia are concerned. This series, however, is readily distinguished from *iranicus* in that the throat maculation consists of more or less transverse lines or bars, the throat spots of *iranicus* being round, with none confluent even into short bars.

Ptyodactylus hasselquisti hasselquisti Donndorff

Lacerta hasselquistii Donndorff, 1789, Zool. Beytr., 3: 133—Palestine (restr. to Jerusalem).

Ptyodactylus hasselquistii hasselquistii Schmidt, 1939, Field Mus. Nat. Hist., Zool. Ser., 24: 56.

One specimen from about 48 km. east of 'Obal, taken on the side of a cliff near a river.

Hemidactylus turcicus turcicus Linnaeus

Lacerta turcica Linnaeus, 1758, Syst. Nat., ed. 10, p. 202—Turkey.

Hemidactylus turcicus turcicus Mertens, 1925, Abh. Senck. Naturf. Ges., 39: 60.

Four specimens from San'a, one from a house, three from beneath rocks in fields.

Hemidactylus flaviviridis Rüppell

Hemidactylus flaviviridis Rüppell, 1835, Neue Wirbelthiere Abyssiniens, Amph., p. 18, pl. 6, fig. 2—Massaua Island, Eritrea.

Two specimens collected at Ta'izz, in a rest house.

Hemidactylus yerburyi Anderson

Hemidactylus yerburyi Anderson, 1895, Proc. Zool. Soc. London, 1895: 630, 640, pl. 36, fig. 1—Lahej and Haithalhim.

Thirteen specimens, eleven collected at Ta'izz and two at Hodeida.

Agama adramitana Anderson

Agama adramitana Anderson, 1896, Contr. Herpet. Arabia, p. 31—between Makalla and the Hadramut Valley.

Seventy-one specimens, all collected at Ta'izz except two, which are from San'a, where the common large agama is *cyanogaster*.

Agama cyanogaster Rüppell

Stellio cyanogaster Rüppell, Neue Wirbelthiere Abyssiniens, Rept., p. 10—Massaua, Abyssinia.

Twenty-one specimens, all from San'a except three, which are from Ta'izz.

Agama isolepis Boulenger

Agama isolepis Boulenger, 1885, Cat. Lizards Brit. Mus., 1: 342—"From Egypt to Sind." Here restricted to Deh Bid, north of Shiraz, Iran.

Three specimens from Ta'izz, taken on rock walls in town.

Acanthodactylus boskianus asper Audouin

Lacerta aspera Audouin, 1827, Descr. Egypte, Rept., Suppl., p. 173, pl. 1, fig. 9—Egypt.

Acanthodactylus boskianus var. *asper* Lataste, 1885, Ann. Mus. Genova, (2), 2: 496.

Ninety-four specimens, from Ta'izz and Hodeida.

Eremias guttulata guttulata Lichtenstein

Lacerta guttulata Lichtenstein, 1823, Verz. Doubl. Mus. Berlin, p. 101—Egypt.

Eremias guttulata guttulata Wettstein, 1928, Sitzber. Akad. Wiss. Wien (math.-natur.), 137, Abt. I, p. 782.

Seventy-one specimens, from Ta'izz, San'a, and Ma'bar.

Latastia longicaudata andersoni Boulenger

Latastia longicaudata var. *andersonii* Boulenger, 1921, Monogr. Lacertidae, p. 30—southwestern Arabia.

A single specimen was taken in a field at Ma'bar.

Philochortus neumanni Matschie

Philochortus neumanni Matschie, 1893, Sitzber. Ges. Naturf. Freunde Berlin, 1893: 30—Aden.

A single specimen was collected on a rock wall in Ta'izz.

Mabuia tessellata Anderson

Mabuia tessellata Anderson, 1895, Proc. Zool. Soc. London, 1895: 636, pl. 36, fig. 2—Aden.

Two specimens were collected on rock walls in Ta'izz.

Scincus hemprichi Wiegmann

Scincus hemprichii Wiegmann, 1837, Arch. Naturg., 3: 128—Abyssinia.

A single specimen from Hodeida was caught among sand hummocks at night.

Chalcides ocellatus ocellatus Forskål

Lacerta ocellata Forskål, 1775, Descr. Anim., p. 13—Egypt.

Chalcides ocellatus ocellatus Wettstein, 1928, Sitzber. Akad. Wiss. Wien (math.-natur.), 137, Abt. I, p. 784.

Three specimens, from Ta'izz and Bajil.

Chamaeleo calyptratus Duméril and Duméril

Chamaeleo calyptratus Duméril and Duméril, 1851, Cat. Meth. Rept., p. 31—no locality; Anderson, 1896, Contr. Herpet. Arabia, p. 62—Yemen.

Chamaeleo calcarifer Peters, 1870, Monatsber. Akad. Wiss. Berlin, 1870: 110—Bembatuka, west coast of Madagascar, *in errore*, corrected to Aden, Arabia.

Fifty-four specimens, all from Ta'izz. With this large series at hand, Anderson's suggestion that *calcarifer* Peters is a synonym of *calyptratus* Duméril and Duméril seems to be amply confirmed.

Chamaeleo chamaeleon chamaeleon Linnaeus

Lacerta chamaeleon Linnaeus, 1758, Syst. Nat., ed. 10, p. 204—Africa and Asia (restr. to Jerusalem, Palestine).

Chamaeleon chamaeleon chamaeleon Werner, 1911, Das Tierreich, 27: 10.

Chamaeleo chamaeleon chamaeleon Mertens and Müller, 1929, Zool. Anz., 84: 296.

Mertens and Müller restrict the type locality of this species to "North Africa." I much prefer Jerusalem as the type locality, since in 1758 Linnaeus must have had fresh Palestinian specimens at hand collected by his pupil Hasselquist, whose *Iter Palaestinum* he had prepared for publication in 1757. Employing Jerusalem as the type locality does not alter the current nomenclature. The occurrence of the common chameleon in Yemen helps to connect its range with that of the Arabian subspecies *orientalis*, but our single specimen is insufficient for definite subspecific identification.

Leptotyphlops nursi Anderson

Glauconia nursii Anderson, 1896, in Boulenger, Cat. Snakes Brit. Mus., 3: 591—Aden.

Leptotyphlops nursi Parker, 1938, Ann. Mag. Nat. Hist., (11), 1: 488.

Leptotyphlops yemenicus Scortecci, 1933, Atti Soc. Ital. Sci. Nat., 72: 165—Yemen.

Five specimens from Ta'izz, found in rubbish in town.

The length of these specimens varies from 120 to 184 mm., the tail length is uniformly 0.08 of the total, and the diameter of the

body is contained in the total length from 61 to 82 times (aver. 71). The correspondence of the Aden fauna with that of the Yemen is so complete that I have no hesitation in referring *Leptotyphlops yemenicus* to *nursi*.

Boaedon lineatus arabicus Parker

Boaedon arabicus Parker, 1930, Ann. Mag. Nat. Hist., (10), 6: 596—El Kubar, Amiri Country, S. W. Arabia.

Boaedon lineatus arabicus Parker, 1941, Brit. Mus. Exped. S. W. Arabia, 1: 4—Jebel Harir, 5,000 feet alt., West Aden Protectorate.

A single specimen, locality unknown, a female, has 240 ventrals, anal undivided, 49 caudals, and dorsal scale rows 27–33–21. The head is crushed.

Coluber rhodorhachis rhodorhachis Jan

Zamenis rhodorhachis Jan, 1865, in de Filippi, Viagg. Pers., p. 356—Iran.

Coluber rhodorhachis Parker, 1931, Ann. Mag. Nat. Hist., (10), 8: 516.

Two male specimens, one from Hodeida, the other from San'a. The Hodeida specimen has ventrals 221, caudals 137, and dorsal scales 19–19–13. In the San'a specimen the ventrals are 226, caudals 133, and dorsals 19–19–11.

Psammophis schokari Forskål

Coluber schokari Forskål, 1775, Descr. Anim., p. 14—Yemen.

Psammophis schokari Boulenger, 1896, Cat. Snakes Brit. Mus., 3: 157.

Psammophis sibilans schokari Loveridge, 1940, Bull. Mus. Comp. Zool., 87: 24.

Four female specimens, two from Hodeida, one from Wadi Mal-el-Ghail, about 13 km. west of Ma'bar, and one from Ta'izz. In these specimens the ventrals range from 174 to 190. The caudals are 151 in a Hodeida specimen; the others have incomplete tails.

If *schokari* and *sibilans* are to be regarded as subspecifically related, no geographic partition is discernible, and it appears to be Loveridge's assumption (loc. cit.) that this is a genuine case of a pair of subspecies held separate by adjustment to distinct habitats.

Bitis arietans Merrem

Bitis (Echidna) arietans Merrem, 1820, Tent. Syst. Amphib., p. 152—Cape of Good Hope.

Bitis arietans Boulenger, 1896, Cat. Snakes Brit. Mus., 3: 493.

Two specimens from Ta'izz.

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